



From Digital Literacy to AI Literacy: Bridging the Gap in Higher Education.

Purva Ratnakar Morkhade¹ & Harshal Ratnakar Morkhade²

Pune

Corresponding Author – Purva Ratnakar Morkhade

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Abstract:

The rapid shift from digital technologies to artificial intelligence (AI) is reshaping education, work, and everyday life. As future professionals, students must move beyond basic digital literacy and develop the knowledge, skills, and attitudes needed to engage with AI responsibly and effectively. This study explores the current level of AI literacy among B. Com (CA) students, highlighting where they stand in terms of understanding and readiness. It further identifies the gaps that exist in transitioning from digital literacy to AI literacy, offering insights into the challenges students face. In addition, the study examines how learners perceive AI in both academic settings and daily life, uncovering their hopes, concerns, and uncertainties. Ethical and practical considerations surrounding AI adoption are also evaluated, ensuring a balanced view of opportunities and risks. Finally, the research proposes strategies for embedding AI literacy into higher education curricula, with the aim of equipping learners not just with technical knowledge, but also with critical, ethical, and adaptable mindsets for the future.

Keywords: Artificial Intelligence, Digital Literacy, Higher Education, Ethics.

Introduction:

In the 21st century, technological advances have rapidly transformed the way individuals learn, work, and interact with the world. While digital literacy once served as the essential skill set for navigating online environments and basic technological tools, the emergence of Artificial Intelligence (AI) has introduced a new paradigm that demands deeper competencies. Today, learners are not only expected to operate digital platforms but also to understand, evaluate, and adapt to AI-driven systems that increasingly shape education, business, and everyday life. This study focuses on B. Com (CA) students, exploring their current levels of AI literacy, identifying gaps in their knowledge and readiness, and assessing their perceptions of AI in both education and daily life.

Higher education plays a critical role in preparing students for this transition. For disciplines such as commerce and computer applications, where future careers are closely tied to technology-driven environments, AI literacy is becoming as crucial as digital literacy once was. However, despite widespread recognition of AI's impact, many learners remain at the early stages of understanding its applications, ethical implications, and potential risks. This gap highlights the need to examine how well-equipped students are to navigate the shift from digital literacy to AI literacy.

Significance of study:

- 1) **For Students:** Helps students understand their current level of AI literacy. Also Creates awareness of the skills and attitudes needed to adapt to an AI-driven

future. Prepares them for professional roles where AI will play a central role.

- 2) **For Educators and Institutions:** Provides insights into gaps in transitioning from digital to AI literacy. Guides curriculum design to include AI-related knowledge, skills, and ethical considerations. Supports the development of teaching methods that integrate technology more effectively.
- 3) **For Policy-Makers and Academic Leaders:** Contributes to shaping policies that promote AI literacy in higher education. Encourage reforms that align education with industry and societal needs.
- 4) **For the Broader Academic and Social Context:** Adds to the global discourse on preparing learners for technological disruption. Highlights the importance of balancing technical knowledge with ethical awareness and critical thinking. Ensures future professionals are not only digitally literate but also competent and responsible in using AI.

Objective:

1. To assess the current level of AI literacy among B. Com (CA) students.
2. To identify gaps in transitioning from digital literacy to AI literacy.
3. To examine perceptions and attitudes toward AI in education and daily life.
4. To propose strategies for integrating AI literacy into higher education curricula.
5. To evaluate the ethical and practical concerns regarding AI adoption.

Research Method:

This study adopts a **Descriptive and Exploratory research design** to assess the current level of AI literacy among B. Com (CA) students and to identify the gaps in transitioning from digital literacy to AI

literacy. The target population consists of undergraduate commerce students specializing in Computer Applications. **Primary data** was collected through a structured questionnaire, which included both closed-ended questions (Likert scale, multiple choice) and open-ended items to capture perceptions, attitudes, and concerns regarding AI. The instrument was validated through expert review and pilot testing to ensure reliability. **Secondary data** sources such as academic journals, reports, and policy documents were also reviewed to provide theoretical grounding and strengthen analysis.

Hypothesis: This study hypothesizes that B. Com (CA) students possess only a basic level of AI literacy and face challenges in moving from digital to AI literacy. It assumes a significant gap exists between their digital skills and AI competencies, and that students' perceptions and attitudes toward AI influence their readiness to adopt it. The research further proposes that integrating AI literacy into higher education curricula will enhance students' professional and societal preparedness. Lastly, it suggests that ethical and practical concerns act as barriers to AI adoption. The null hypotheses represent the opposite possibilities for each assumption.

Review of Literature:

The shift from digital literacy to AI literacy is not a small upgrade, it's a change in what we expect learners to *understand* and *judge* about technology. Where digital literacy focused on using tools (browsers, spreadsheets, safe online behavior), contemporary frameworks now call for competencies related to systems that make decisions or generate content. The European Commission's Dig Comp 2.2 explicitly updates the digital-competence conversation to include interacting with AI-driven systems,

signaling that policy and curricula are already catching up to this reality.

Long and Magerko's influential CHI paper defines AI literacy for non-technical learners as a set of competencies: knowing what AI is and isn't, using AI tools effectively, critically evaluating AI outputs, and understanding ethical implications. This framing deliberately emphasizes reasoning and judgement skills that matter even if students will never write machine-learning code.

Measurement of AI literacy is a rapidly developing but uneven area. Systematic reviews and methodological studies show many new scales and instruments, but most lack full validation or broad comparability. Recent reviews (2023–2025) conclude that while valuable tools exist for example, the Meta AI Literacy Scale and other emerging measures researchers should be cautious: instruments differ in whether they measure awareness, practical use, or ethical reasoning, and many studies still use ad-hoc surveys. This inconsistency makes cross-study comparisons difficult and argues for careful operational definitions in new research.

Ethical and practical concerns dominate literature. Reviews and policy documents highlight risks such as bias, privacy breaches, hallucinations in generative systems, and threats to academic integrity. International organizations like UNESCO emphasize a human-centered, values-driven approach to AI education that foregrounds fairness, human agency, and responsibility. Research on academic integrity suggests that clear institutional policies and ethics education reduce misuse and help students adopt AI tools responsibly rather than circumventive.

Discussion:

The findings of this study confirm that while B. Com (CA) students are digitally

literate, their AI literacy remains at a basic level. This result aligns with earlier literature that emphasizes how digital competence does not automatically translate into AI competence (European Commission, 2022). Students may know how to use computers, software, and the internet effectively, but understanding how AI systems work including their limitations, biases, and ethical challenges requires a deeper set of skills and awareness (Long & Magerko, 2020).

The gap between digital literacy and AI literacy is not simply a technical issue but also a matter of critical thinking and values. Students expressed both optimism and concern: they view AI as a helpful tool for efficiency and productivity but remain cautious about job displacement, accuracy, and academic integrity. Similar attitudes have been observed in international studies, where learners welcomed AI tools for learning support but feared misuse and overdependence (Chan et al., 2023). These mixed perceptions highlight the importance of addressing both practical skills and ethical reasoning in AI education.

Another key argument that emerges is the role of higher education in bridge this gap. The current curriculum in commerce and computer applications provides little structured exposure to AI concepts. Without formal guidance, students rely on informal learning, which may lead to misconceptions or inconsistent practices. Literature suggests that integrating AI literacy across disciplines rather than isolating it as a niche subject can better prepare students for professional contexts where AI will be embedded in finance, auditing, marketing, and management (UNESCO, 2024).

Ethical and practical barriers identified in this study reinforce calls for a human-centered approach to AI education. Students'

concerns about bias, privacy, and fairness reflect the wider academic and policy discourse that stresses the need for responsible adoption of AI (Almatrafi et al., 2024). Institutional policies and clear guidelines are therefore essential to avoid confusion and promote responsible use. Without such direction, students may misuse AI tools or miss opportunities to benefit from them in legitimate ways.

The arguments also extend to faculty and institutional readiness. If educators themselves lack AI literacy, they may struggle to design meaningful learning experiences or provide proper guidance. This makes capacity building for educators a necessary step alongside student training. Moreover, continuous evaluation of AI literacy levels is critical to ensure that the curriculum keeps pace with technological advancements and the evolving needs of society.

The discussion supports the argument that AI literacy is not a luxury but a necessity in higher education. It requires a dual focus: building students' technical and critical competencies while embedding ethics and responsibility at the core. For B. Com (CA) students, this transition is particularly urgent given the strong role AI will play in commerce, finance, and data-driven decision-making. Bridging the gap between digital and AI literacy is thus not only about employability but also about preparing responsible, adaptive, and ethical professionals for the future.

Findings:

1. **Current Level of AI Literacy:** B. Com (CA) students demonstrate a reasonable level of digital literacy but only a basic level of AI literacy. Their understanding is largely limited to surface-level awareness rather than deeper competencies such as

critical evaluation, ethical use, or practical application.

2. **Gap Between Digital and AI Literacy:** A significant gap exists between students' digital skills and their AI literacy. While students feel comfortable with technology, they often lack confidence in navigating AI-driven systems.
3. **Perceptions and Attitudes Toward AI:** Students' attitudes toward AI are mixed: they view AI as useful for learning and productivity but express concerns about job replacement, academic integrity, and over-reliance on technology. Their readiness to adopt AI is shaped by both optimism and caution.
4. **Ethical and Practical Concerns:** Ethical issues such as bias, privacy, and misuse of AI tools remain key barriers. Practical challenges include lack of proper training, insufficient curriculum integration, and unclear institutional guidelines on responsible AI usage.
5. **Need for Curriculum Integration:** Current curricula in higher education (specifically commerce and computer applications) do not adequately cover AI literacy. Students recognize the value of AI but lack structured opportunities to learn its applications, risks, and ethical implications.

Recommendations:

1. **Integrate AI Literacy into Curriculum:** Introduce dedicated modules or integrate AI-related content across existing courses, focusing on both technical knowledge and ethical reasoning.
2. **Develop Skill-Building Workshops and Promote Ethical Awareness:** Organize hands-on workshops, case studies, and practical projects to give students exposure to real-world AI applications

relevant to commerce, finance, and computer applications. Incorporate discussions on ethics, privacy, bias, and academic integrity into AI-related teaching to ensure students use AI responsibly and critically.

3. **Institutional Policy and Guidelines:** Higher education institutions should create clear policies for AI usage in learning, assignments, and research to minimize misuse and confusion among students.
4. **Capacity Building for Educators and Encourage Interdisciplinary Learning:** Train teachers and faculty members in AI literacy so they can effectively guide students and design AI-inclusive pedagogies. Blend commerce, technology, and ethics perspectives to provide students with a holistic understanding of AI, preparing them for both professional and societal roles.
5. **Continuous Evaluation:** Regularly assess students' AI literacy levels through updated tools and feedback mechanisms, ensuring curriculum remains relevant to evolving technologies.

Conclusion:

This study reveals that B. Com (CA) students, while digitally competent, exhibit only a basic level of AI literacy, with notable gaps in critical evaluation, ethical reasoning, and practical application. Digital literacy alone is insufficient for navigating AI-driven academic, professional, and social environments. Students' attitudes toward AI are mixed; they recognize its benefits for efficiency and learning but express concerns about job security, academic integrity, and

potential misuse. These insights highlight the urgent need for a comprehensive approach to AI education that goes beyond technical skills. Bridging the transition from digital to AI literacy requires fostering critical thinking, ethical awareness, and adaptability. Higher education institutions play a pivotal role by embedding AI concepts into curricula, offering hands-on learning opportunities, and developing clear policies for responsible AI use. Equally important is enhancing faculty capacity to guide students effectively and continuously evaluating AI literacy to align with evolving technologies.

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